



ASTHMA 411

Breathe Easier Learn Better

Helping Texas students breathe better one school district at a time.

2024-2025

Greater Tarrant Area Asthma 411 Consortium Report



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Program Snapshot

Key Outcomes

74.5%

Students returned back to class after receiving treatments due to respiratory distress

5,012

Estimated reclaimed instructional hours due to program implementation

\$432.56

Estimated financial benefit to schools and families per campus

98.5%

Nurses satisfied or somewhat satisfied with program implementation

56%

Unassigned albuterol use reported in Texas occurs in region served by Asthma 411

*This includes recovered attendance-related funds for schools and reduced work absences only

Across the state, there is increasing engagement with Asthma 411 program content, and tools developed for our Consortium are being adapted to strengthen school asthma programs across Texas.

Collaborated: Through Cross-Sector Partnerships to Improve Health and Education

10 Partner Independent School Districts*

2 Health and Hospital Networks (JPS and Cook Children’s Center for Community Health)

1 Academic Health Science Center (UNT Health | Texas Center for Patient Safety)

Supported: School Health Services

364 Campuses with 240,784 Enrolled Students

1:5 Social Return on Investment: Every \$1 spend on program materials provides an estimated \$5 financial benefit to schools and families.

Enabled On-Campus Care: for Children Experiencing School-Day Respiratory Distress

1,682 Reported Unassigned albuterol treatments for children with respiratory distress

10.09 yrs Average age of child receiving treatment

3-18 yrs Range of ages reported to receive unassigned albuterol

24% Children were dismissed to parent/caregiver after treatment

1.5% EMS call reported (17 EMS activations reported with or without transport)

Feedback: Received from Our Partners

278 Responses to Annual End of Year Survey of school nurses and health staff (76% response rate)

99.5% Found SDOs to be manageable/somewhat manageable

99% Report that parent feedback is positive/somewhat positive

Introduction

Overview

The Asthma 411 story began over 20 years ago with the goal of developing a comprehensive and sustainable, school-based approach to improve outcomes for children with asthma (Figure 1).

The Asthma 411 model was developed, implemented, and evaluated in St. Louis from 2002-2008 as part of CDC's Controlling Asthma in American Cities' project. In 2013, an academic community partnership conducted a two-year, two-school pilot of Asthma 411 in Fort Worth. The program was expanded to 22 schools in 2016-2017. With strong stakeholder support, the Greater Tarrant Area Asthma 411 Consortium was formed in 2017 with a goal of making the program available to any school district in the Tarrant County area that wishes to implement it. Since that time, the Consortium has continued to expand and strengthen the services it provides (Figure 1).

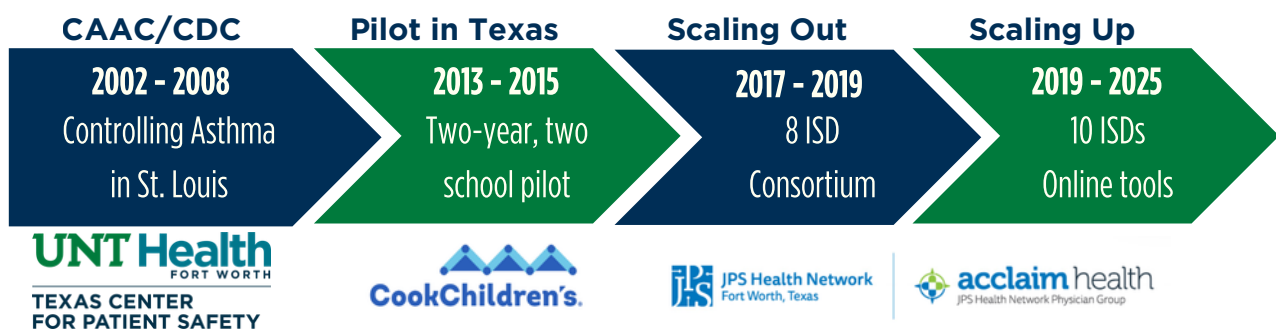
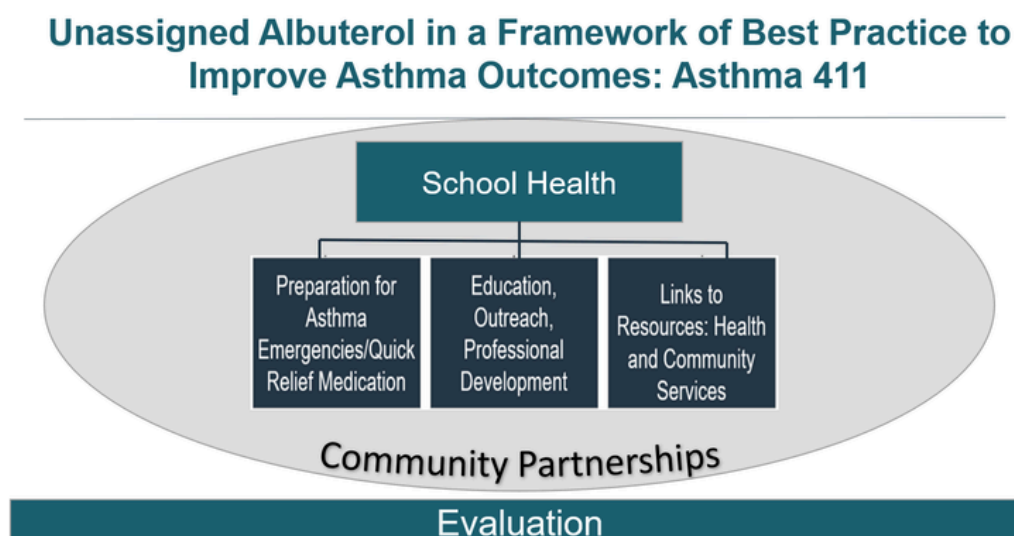


Figure 1 - Timeline of Asthma 411 Program

The Asthma 411 Model

Since 2002, Asthma 411 programs and services have been designed as a sustainable, replicable model to implement national best practices in asthma services with the mission of improving asthma outcomes. Program tools are reviewed and updated at least annually. We categorize program content into three components that align with organizational health literacy to build safety for those experiencing respiratory distress at school and support improved asthma outcomes. Cross sector partnerships and program evaluation are also key elements of the Asthma 411 Model. (Figure 2).



The Asthma 411 Model (continued)

Evaluation

Evaluation has been a critical component of Asthma 411 since its inception to enable data-supported program improvement, feedback to our partners, and ensure resources are best directed to meet needs. Through evaluation, we can also share the benefits of “lessons learned” to others.

Annual Review

Interdisciplinary review is conducted annually to ensure alignment with new developments and the changing needs of our partners. Annual reviews include: medical review by the Asthma 411 Medical Advisory Council, input from school health administrators and nurse surveys, consideration of best practice guidelines from national professional associations, program outcomes, and systematic rapid literature reviews.

Asthma 411 Consortium

The Greater Tarrant Area Asthma 411 Consortium includes the following:

Cook Children’s Center for Community Health

Providing medication, supplies, pharmacy services, and annual professional development symposiums.

JPS Health Network | Acclaim Physician Group

Providing standing delegation orders for 7 school districts and Chair of Asthma 411 Medical Advisory Council (AMAC) which consists of two pediatricians from each health institution.

UNT Health Fort Worth | Texas Center for Patient Safety

Providing online tools for implementation of unassigned albuterol aligned with Texas legislation, annual district specific orientations and updates, establishing and maintaining of Memoranda of Understanding, evaluation, and coordination as collaboratively determined by partners.

School District Partners with Active Agreements in 2024-2025

The following school districts had active Memorandums of Understanding during the 2024-2025 school year:

Arlington	Burleson	Eagle Mountain-Saginaw	Northwest
	Azle	Crowley	Hurt-Euless-Bedford
	Alvarado	Everman	Fort Worth

Asthma Emergencies

Why Unassigned Albuterol?

Respiratory distress can strike children at any time, bringing difficulty breathing, wheezing, shortness of breath, and chest tightness. These episodes cause anxiety, interfere with normal activity, may require Emergency Medical Services (EMS) or hospitalization, and can be fatal. Quick-relief medication (albuterol) is safe, effective, and may rapidly bring relief.

Best practices recommend that quick relief medication always be available for those with asthma. Unfortunately, evidence shows fewer than 20% of students with school-documented asthma have access to this potentially life-saving medication. In Texas, an estimated 492,000 school-age children have current asthma without access to quick relief medication during the school day.

Since its inception, access to unassigned albuterol has been identified as a core component of Asthma 411. However, the benefits of albuterol only last 4-6 hours, and over-dependence on this type of quick relief medication is a risk for adverse asthma outcomes and fatalities. Consequently, all three components of the Asthma 411 model are critical.

Use of Unassigned Albuterol and Standing Delegation Orders (SDOs)

During 2024-2025, 10 of the 11 ISDs with active Memorandums of Understanding implemented unassigned albuterol programs, receiving medication, supplies, and professional development. This represents 364 partner campuses, where over 240,784 students are enrolled (Figure 3).

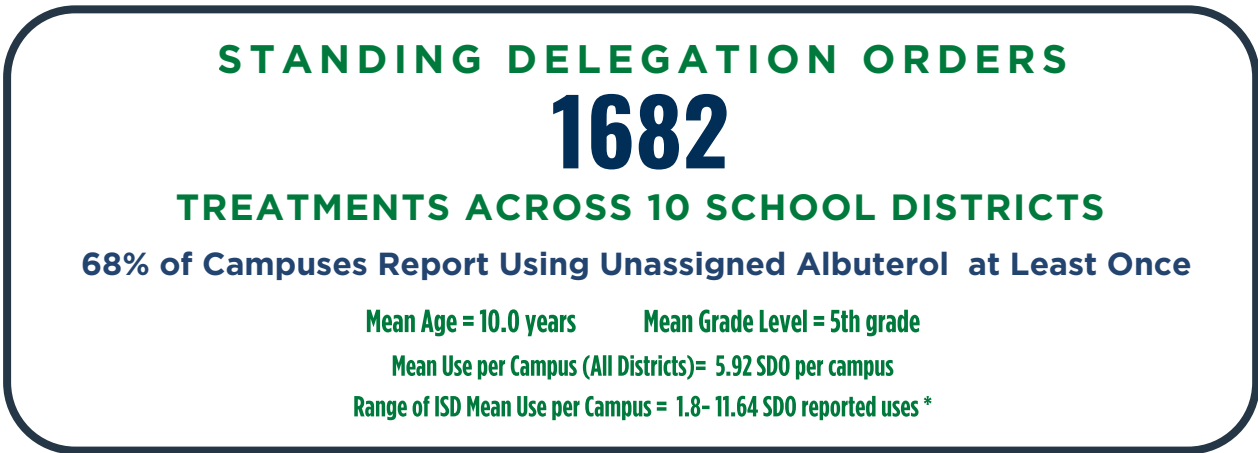


Figure 3 - Use of Standing Delegation Orders

School districts reported using standing delegation orders for 1682 episodes of respiratory distress. Symptoms fully resolved for 74.5% of these students who returned to class; 24% were dismissed to parents to receive same-day care; EMS was called for about 1.5% of these episodes (Figure 4; Percentages may not total 100 due to rounding).

Outcome after SDO Usage*



*About 1.5% required 911 phone call (includes transportation and no transportation)

Figure 4 - Short-term Outcomes of Standing Delegation Order Usage

Having quick-relief medication available increases instructional time for students and attendance-related funding for schools, reduces work absences and lost wages for families, and prevents unnecessary, school-day EMS calls

In 2024, a health economist reviewed Asthma 411's methods for estimating financial benefits. The recommendations were applied to the 2023-2024 evaluation, and replicated for 2024-2025. In 2024-2025, the estimated cost of medication and supplies is also included. Table 1 presents these results.

With the estimated cost of medications and supplies per campus and financial benefits, it is possible to calculate an estimated Social Return on Investment (SROI). The SROI is estimated at 1:5; for every one dollar invested in medication and supplies there is an estimated 5 dollars of financial benefit for schools and families.

Table 1 - Estimated Recovered Instructional Hours and Financial Benefits, 2024-2025	Count	Estimated Financial Benefit
Estimated increased instructional hours* *4 hours/student returning to class	5,012 hours	N/A
Estimated reduced absences* *Based on one half of those who returned to class did so before daily census for attendance and \$65 cost/student	626 days	\$40,690
Reduced work absence hours* *Number of students return to class * 4 hours * median reported hourly wage for the region	5,012 hours	\$116,729.48
Estimated direct financial benefits for schools and families	\$157,451.98	
Estimated average direct financial benefit for schools and families per campus	\$432.56	
Estimated average cost of medication and supplies per campus	\$86.8	
Estimated Social Return on Investment	1:5	

campus, and Social Return on Investment.

There are many additional benefits that are not included in the estimates above. For example, school nurses report decreased student anxiety and increased readiness to learn among those receiving services. The above estimates also do not include prevented EMS or other medical costs, or the benefit of reduced academic risk.

Nursing Perspective

It is critical to ensure school nurses and health staff have the tools needed to implement standing delegation orders in compliance with best practice and state mandated requirements. We seek their feedback for continuous program improvement through an annual survey. Figures 5 & 6 present responses to selected survey questions. Additional information is available on request. The concerns most frequently cited by nurses and health staff, were connecting with families to ensure follow-up, and the amount of documentation required.

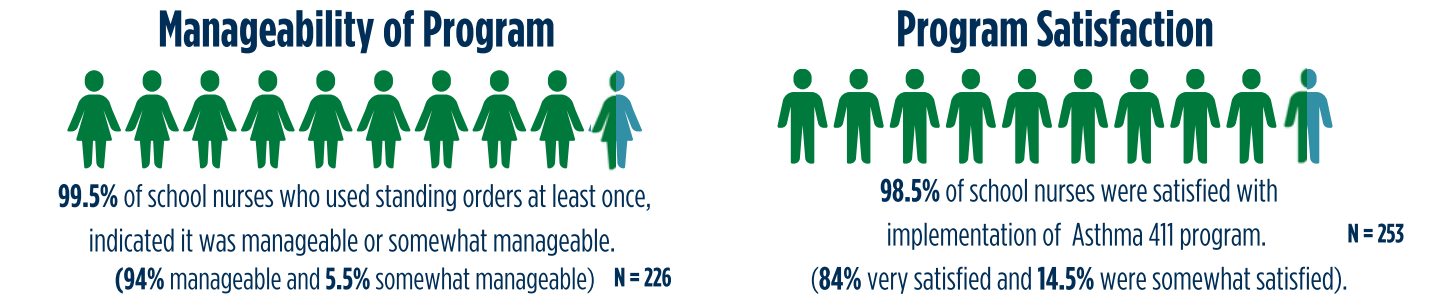


Figure 5 - Nursing Evaluation of Asthma 411 Program

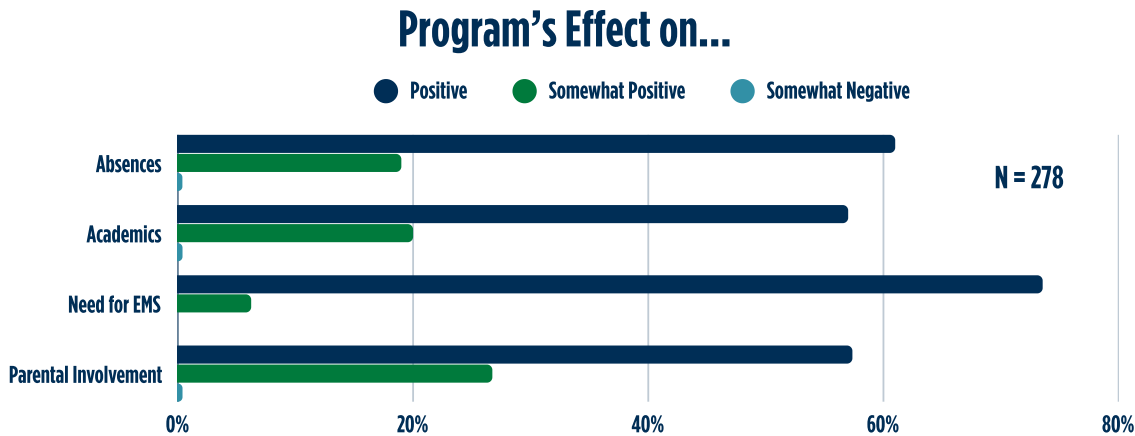


Figure 6 - Nursing Perspective on Outcomes

State Level Engagement

Since 2019 when Texas passed legislation related to unassigned albuterol, we have recognized the need for engagement with the policy and rule-making processes. In 2023, Consortium level outcomes were shared with legislators and made a substantial contribution to changes in legislation that aligned Texas policy with national guidelines for unassigned albuterol. The Greater Tarrant Area Asthma 411 Consortium appears to be the largest implementer of unassigned albuterol in Texas. In 2024-2025, 56.4% of the reported use of unassigned albuterol in Texas occurred in Education Service Center Region 11, where the Asthma 411 Consortium is located. Only 54 of 1017 school districts (5.3%) in Texas reported using unassigned medication for albuterol at least once in 2024-2025; 10 of these are Asthma 411 partners.

In 2025, members of the Asthma 411 Consortium developed the Texas Implementation Guide for Unassigned Medication for Respiratory Distress. Representatives of Asthma 411 participate in state workgroups on asthma disparities, school asthma programs, and asthma education. During 2024-2025, Asthma 411 and tools for unassigned albuterol implementation were presented as part of the Texas School Nurse Organization Annual Conference, and the American Lung Association's Asthma Awareness Month Webinar.

Education & Professional Development

Nursing Awareness of Resources

Asthma 411 has provided a range of resources to support asthma self-management education, ensure key information regarding unassigned albuterol is available in the family’s language of choice, and professional development that supports implementation of the Asthma 411 model. It is critical to disseminate awareness of these resources to all participating campuses. Figure 7 depicts awareness of four resources provided by the Texas Center for Patient Safety since 2020.

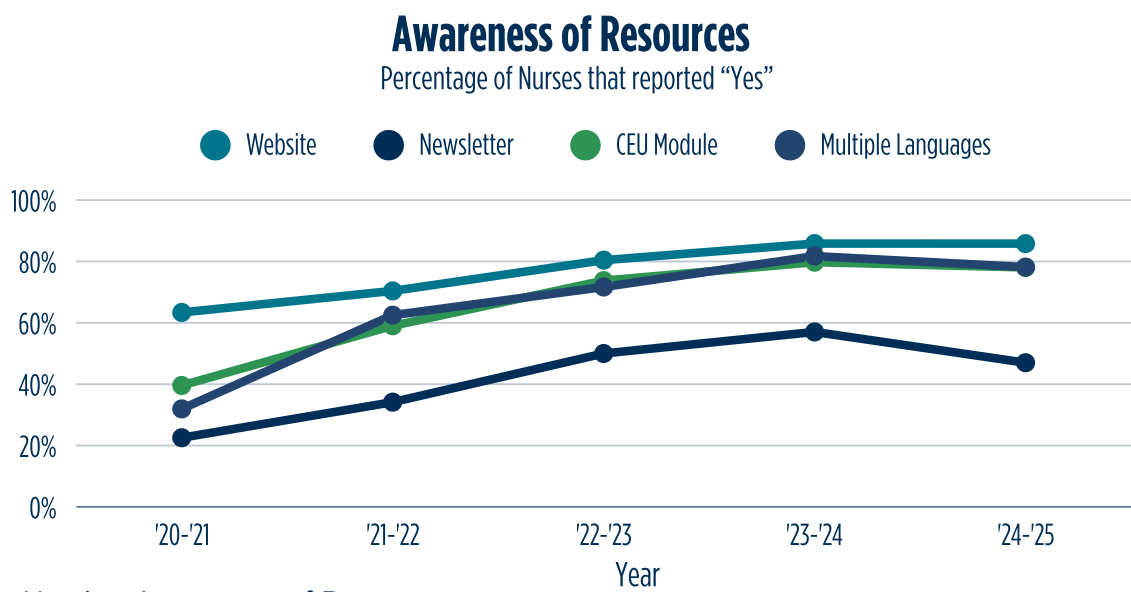


Figure 7 - Nursing Awareness of Resources

Cook Children’s Asthma Inservice

Cook Children’s Center for Community Health has provided an annual School Asthma Inservice that supports Asthma 411 since 2018. This offering is available free of charge and provides 1 continuing education credit. This year, Cook Children’s has made the Inservice and CE available online through December of 2025.

In 2024, the event was entitled, “Recognizing Asthma Emergencies”. A total of 378 individuals engaged in the inservice and completed the program evaluation.

Objectives included the following:

- 1.Examine case studies that recognize asthma emergencies.
- 2.Identify potential triggers for asthma emergencies in school environments.
- 3.Describe an Asthma Action Plan for school use.

In ranking whether objectives were met, the average rating was 4.83 on a scale of 1-5. Additional evaluation results are presented in Figure 8.

Cook Children’s Inservice Feedback

Question 1 - “The activity content was valid to my educational needs as a member of the healthcare team.”

Question 2 - “The educational format was effective and included active learning.”

Question 3 - “This activity helped me to recognize the importance of interprofessional collaboration to improve patient care.”

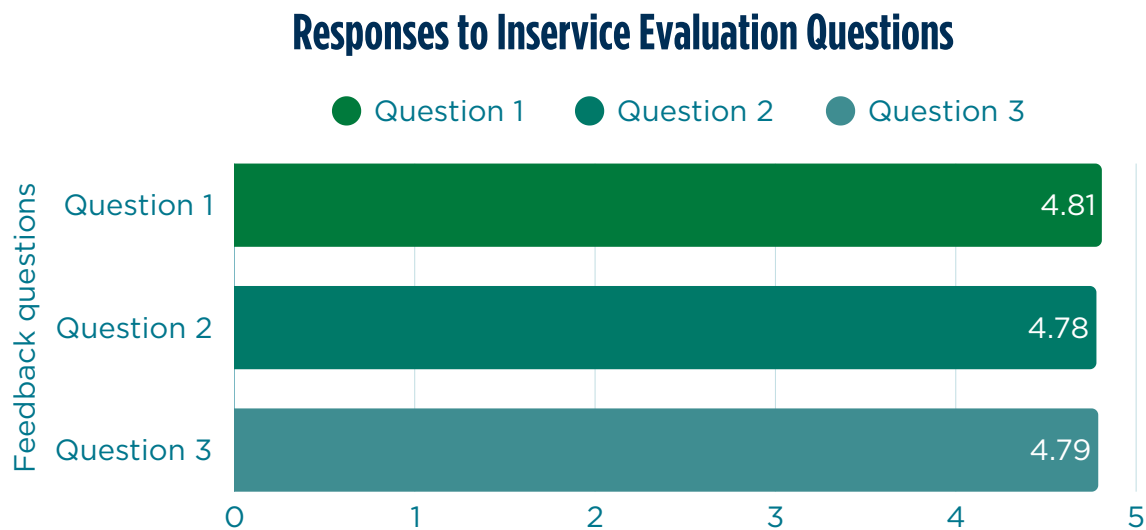


Figure 8- Feedback from Cook Children’s Asthma Inservice

Texas Center for Patient Safety Continuing Education

“Asthma 411: What you need to know” is a free, online, on-demand training module that provides one nursing continuing education (CNE) credit. Texas Center for Patient Safety and UNT Health partners updated the CNE in 2024 to reflect changes in Texas legislation.

Between January 25, 2024 and October 26, 2025, 307 individuals completed the training module that provides one nursing continuing education credit (CNE). Key takeaways from the CNE’s evaluation include:

- Overall satisfaction was high among both nurses and non-nurses
- 86% indicated they would incorporate knowledge from the CNE into their practice
- Though the majority of participants were from the Tarrant Area, there were also participants from across Texas and several other states

Results of the CNE knowledge test are shown in Figure 9. Nurses and non-nurses showed knowledge gains, but this gain was larger for non-nurses.

Texas Center for Patient Safety Continuing Education Module Feedback* N = 307				
Knowledge Test	Pre-Test	Post-Test	Gain	Statistical Significance
All	87.10	96.06	8.96	p=>0.001
Nurses Only	88.07	95.55	7.54	p=>0.001
Other Participants	84.42	97.43	13.01	p=>0.001

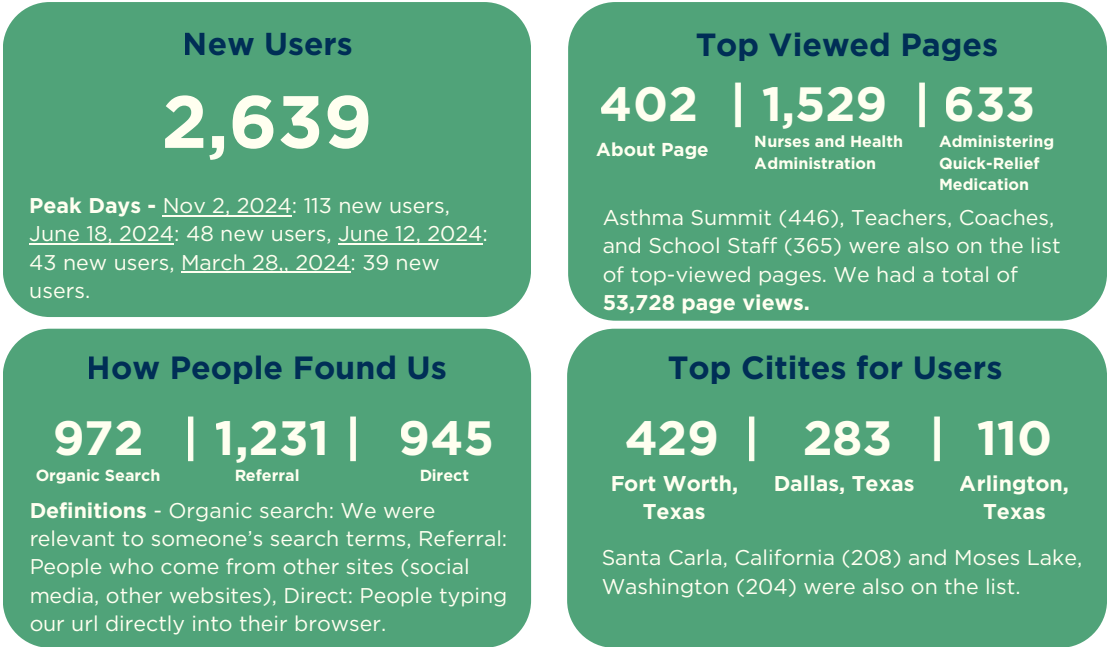
Figure 9- Knowledge gain on Asthma 411 CNE.

Asthma 411 Communication Channels

Website

The Asthma 411 website provides a digital platform for downloadable Asthma Self-Management Education, resources to implement the Asthma 411 model, and on-demand professional development (CNE). Since 2019, the website has been updated and maintained by Texas Center for Patient Safety at UNT Health Fort Worth. All resources are free and available to all members of the public. Below is data on the use of the Asthma 411 website between August 1st, 2024, and August 1st, 2025.

Engagement with our Nurses & Health Administration resources increased by 18%, showing strong and growing interest from school health professionals.



Newsletter

The Asthma Connect Newsletter is provided by Texas Center for Patient Safety and provides links to resources, seasonal tips for asthma management, and information on training and education events. Texas Center for Patient Safety distributed 13 editions of the newsletter between August 1st 2024 - August 1st 2025.



Linking Families to Resources

Access to Resources

Linking families to asthma information and resources has been a part of the Asthma 411 model since 2002. We continue to recognize it as essential to achieve our mission of improving asthma outcomes. At the same time, it is recognized to be the most challenging element of the model to implement. In Asthma 411's annual survey, nurses and health staff report that the greatest challenge to implementation is follow-up with families to assess whether students are receiving appropriate medical care and other resources needed to manage their asthma.

We recognize that students and families may face transportation, linguistic, financial and cultural barriers to receiving medical care, medication, devices, asthma education, and resources to address non-medical drivers of health that impact asthma outcomes. This last category may include housing needs, exposure to environmental triggers, and more.

Current Content

- Annually update a listing of all clinical resources in the Greater Tarrant Area that accept Children's Health Insurance Program (CHIP) or Medicaid, or provide sliding-fee or free services for low-income families. This listing is disseminated on the website, in professional development, and presentations to school districts.
- Actively support the use of Texas 211 and FindHelp.org through the website and professional development resources.
- Provides downloadable asthma education and communication content for families.

Innovation: Asthma 411 Mini-Challenge

Since 2022, Texas Center for Patient Safety has offered the Asthma 411 Mini-Challenge to support innovative approaches that strengthen our initiative. School districts submit proposals with their outcome metrics and budget and may receive up to \$2,500 per semester to pilot their ideas.

Northwest ISD (NISD) has received Mini-Challenge Awards since 2022, and developed innovations to improve follow-up and education for students experiencing asthma flare ups at school. As of November 2025, asthma self-management education had been provided to 716 students. Follow-up was provided for 208 uses of unassigned albuterol which included outreach to parents, and an Asthma Control Test (ACT) to assess the students asthma management. Among those receiving an ACT, 51% had a score indicating a risk for poor control, indicating the importance of assessing the needs of students who receive unassigned albuterol.

Conclusions

Conclusion Point 1

The Greater Tarrant Area Asthma 411 Consortium has effectively sustained its 8 year partnership to improve safety and outcomes for students with asthma and respiratory distress at school.

Conclusion Point 2

Collaborative efforts for continued improvement are needed to achieve our mission of improving asthma outcomes for all students in the schools and communities we serve. There is a particular need for greater capacity to connect with families and caregivers, and provide links to the resources they need.

Conclusion Point 3

Lessons learned from the Greater Tarrant Area Asthma 411 Consortium are being shared to extend the benefits beyond the boundaries of our community, and support best practice in policy and tools for implementation.

Key Findings



Asthma 411 is contributing to development of statewide tools for unassigned albuterol

Recommendations:

- 1.The assessment and follow-up being piloted in the Asthma 411 Mini-Challenge may make a critical contribution to the goal of identifying students with poor asthma control, and responding with resources to improve asthma outcomes. Creating replicable tools from this pilot should be a priority.
- 2.Efforts to identify campuses with higher unassigned albuterol use during the school year should be paired with efforts to increase asthma education and related resources for students and families.
- 3.Guides should be developed for school districts that are newly joining the Greater Tarrant Area Consortium, as well as for communities interested in replicating the Asthma 411 Consortium model.

Appendix

Asthma411 Logic Model

Logic Model

Texas Center for Patient Safety & Greater Tarrant Area
Asthma 411 Consortium

Problem: Unidentified and poorly controlled asthma

Goal: Improve education and health outcomes for children with asthma by promoting best practice implementation including:

1) tools for schools to address respiratory distress emergencies including quick-relief medication, **2)** offering asthma professional development, self-management education, and awareness, and **3)** connecting children and families with community services.

Inputs

- Medication/Supplies
- Interdisciplinary expertise related to comprehensive management of pediatric asthma
- Standing Delegation Orders developed and medically reviewed annually
- Pharmacy Services
- AS-ME resources
- Website to serve as digital platform for dissemination of program content
- Resources for multi-channel health education and communications
- Cross-sector collaboration through Greater Tarrant Area Asthma 411 Consortium

Activities

- Develop and provide comprehensive resources for implementation of quick-relief medication in a framework to improve asthma outcomes including:
- Continuing Education and Professional Development aligned with Texas legislation and national best practice.
 - District-specific program updates
 - Tools for community referrals
 - Asthma awareness and education at community events
 - Asthma education provided through website, CEU, newsletter, and other collaboratively identified channels
 - Annual Asthma Inservice
 - Quarterly consultation with Asthma Medical Advisory Council
 - Stakeholder and community engagement
 - Annual evaluation

Short Term Outcomes

- Quick-relief medication available to all students within partner ISDs
- Tools available for program implementation
- Increased awareness of education tools
- Increased awareness of tools to provide referrals
- Increased instructional time
- Decreased need for school day, asthma-related EMS
- Reduced need for early dismissals
- Increased delivery of asthma awareness and education to students and families
- Improved definition of current asthma burden

Intermediate Outcomes

- Reduce the attendance gap between children with and without asthma
- Reduce academic risk and loss of school funding that result from excess absences
- Reduce economic burden of poorly controlled asthma on families

Long Term Outcomes

- Improve health and quality of life among children and families impacted with asthma
- Reduce economic burden of poorly controlled asthma
- Sustained cross-sector collaboration
- Reduce health disparities

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For questions or additional information about data or methods, please contact:

Leslie Allsopp, PhD, MSN, MPH | Assistant Professor

Pediatric and Women's Health Department | Texas College of Osteopathic Medicine
Asthma 411 Faculty Partner | Texas Center for Patient Safety
UNT Health Fort Worth
Fort Worth, TX

Leslie.Allsopp@unthealth.edu